

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please amend the claims as follows:

1. (Previously Presented) A rheology-modified, gel-free thermoplastic elastomer composition comprising from 60 to 90 weight percent, based on the weight of the composition, of at least one elastomeric ethylene/alpha-olefin polymer or ethylene/alpha-olefin polymer blend, and from 10 to 40 weight percent, based on the weight of the composition, of at least one high melting polymer selected from the group consisting of polypropylene homopolymers and propylene/ethylene copolymers, and wherein the rheology modification is induced by a combination comprising 0.075 weight percent or less peroxide, and a free radical coagent, and wherein the peroxide:coagent ratio is from 1:4 to 1:20, and the rheology-modified, gel-free thermoplastic elastomer composition has an STI of 15-30, a tan delta at 190°C of 1.05-1.40, and a gel content that is below detectable limits when using xylene as the solvent in ASTM D 2765-90, method B; and wherein the amount of peroxide is based on the weight of the high melting polymer and the weight of either the elastomeric polymer of the elastomeric polymer blend.
2. (Previously Presented) The composition of Claim 1, wherein the peroxide concentration is 0.050 weight percent or less.
3. (Previously Presented) The composition of Claim 1, wherein the peroxide is an organic peroxide.
4. (Previously Presented) The composition of Claim 1, wherein the organic peroxide is selected from the group consisting of α,α' -bis(t-butylperoxy)-diisopropylbenzene; dicumyl peroxide; di-(t-amyl)peroxide; 2,5-dimethyl-2,5-di(t-

butylperoxy)hexyne-3; 2,5 (t-amyl peroxy-2-ethylhexonate); 2,5-dimethyl-2,5-di-(t-butyl peroxy)hexane; di-t-butylperoxide; 2,5-di(t-amyl peroxy)-2,5-dimethylhexane; 2,5-di-(t-butylperoxy)-2,5-diphenylhexane; bis(alpha-methylbenzyl)peroxide; t-butyl perbenzoate; benzoyl peroxide; 3,6,9-triethyl-3,6,9-trimethyl-1,4,7-triperoxonane; and bis(t-butylperoxy)-diisopropylbenzene.

5. (Previously Presented) The composition of Claim 1, wherein the free radical coagent is selected from the group consisting of diallyl terephthalate; triallylcyanurate; triallylisocyanurate; 1,2-polybutadiene; divinyl benzene; trimethylolpropane trimethacrylate; polyethylene glycol dimethacrylate; ethylene glycol dimethacrylate; pentaerythritol triacrylate; allyl methacrylate; N,N'-m-phenylene bismaleimide; toluene bismaleimide-p-quinone dioxime; nitrobenzene; and diphenylguanidine.

6. (Previously Presented) The composition of Claim 5, wherein the free radical coagent is selected from the group consisting of triallylcyanurate; 1,2-polybutadiene; divinyl benzene; and trimethylolpropane trimethacrylate.

7. (Previously Presented) The composition of Claim 1, wherein the ethylene/ α -olefin polymer has polymerized therein at least one α -olefin comonomer, the α -olefin containing from 3 to 20 carbon atoms.

8. (Previously Presented) The composition of Claim 7, wherein the α -olefin contains from 3 to 10 carbon atoms.

9. (Previously Presented) The composition of Claim 1, wherein the ethylene/ α -olefin polymer is a diene-modified polymer, the diene being selected from the group consisting of norbornadiene, dicyclopentadiene, 1,4-hexadiene, piperylene, 5-ethylidene-2-norbornene and mixtures thereof.

10. (Previously Presented) The composition of Claim 1, wherein the high melting polymer is a nucleated polymer.

11. (Previously Presented) The composition of Claim 1, further comprising a process oil, in an amount within a range of from greater than 0 to about 50 weight percent, based on total composition weight.

12. (Previously Presented) The composition of Claim 1 or Claim 11, further comprising a filler, in an amount within a range of from about 0 to about 70 weight percent, based on total composition weight.

13. (Previously Presented) A process for preparing a rheology-modified, gel-free TPE composition, the process comprising: a) adding at least one peroxide and at least one free radical coagent, in a peroxide:coagent ratio of 1:4 to 1:20, and a maximum peroxide concentration of 0.075 weight percent, to a molten polymer blend that comprises from 60 to 90 weight percent, based on the weight of the composition, of an elastomeric ethylene/alpha-olefin polymer, and from 10 to 40 weight percent, based on the weight of the composition, of a high melting polymer, selected from the group consisting of polypropylene homopolymers and propylene/ethylene copolymers; and b) maintaining the polymer blend in a molten state, while subjecting it to conditions of shear, sufficient to disperse the peroxide and coagent throughout the molten polymer blend, effect rheology modification of the polymers, and preclude formation of insoluble polymer gels (determined using xylene as the solvent in ASTM D 2765-90, method B), and wherein sufficient rheology modification is measured by an STI of 15-30 and a tan delta of 1.05-1.40; and wherein the amount of peroxide is based on the weight of the high melting polymer and weight of the elastomeric polymer.

14. (Previously Presented) A process for preparing a rheology-modified, gel-free TPE composition, the process comprising: a) adding at least one peroxide and at least one free radical coagent, in a peroxide:coagent ratio of 1:4 to 1:20, and a maximum peroxide concentration of 0.075 weight percent to at least one component of a polymer blend, before the components are blended, the component polymers comprising an elastomeric ethylene/alpha-olefin polymer and a high melting polymer, selected from the group consisting of polypropylene homopolymers and

propylene/ethylene copolymers; b) blending the component polymers; and c) converting the polymer blend to a molten polymer blend, while subjecting the blend to conditions of shear, sufficient to disperse the peroxide and coagent throughout the molten polymer blend, effect rheology modification of the polymers, and preclude formation of insoluble polymer gels (determined using xylene as the solvent in ASTM D 2765-90, method B), and wherein sufficient rheology modification is measured by an STI of 15-30 and a tan delta of 1.05-1.40; and wherein the amount of peroxide is based on the weight of the high melting polymer and the weight of the elastomeric polymer.

15. (Canceled)

16. (Canceled)

17. (Previously Presented) A process for preparing a rheology-modified, gel-free thermoplastic elastomer article of manufacture, the process comprising: a) adding at least one peroxide and at least one free radical coagent, in a peroxide:coagent ratio of 1:4 to 1:20, and a maximum peroxide concentration of 0.075 weight percent, to a molten elastomeric ethylene/alpha-olefin polymer or elastomeric ethylene/alpha-olefin polymer blend, to provide a rheology-modified ethylene/alpha-olefin polymer or ethylene/alpha-olefin polymer blend; b) adding to the rheology-modified polymer, or polymer blend, a high melting polymer, selected from the group consisting of polypropylene homopolymers and propylene/ethylene copolymers, to form a composite polymer blend; and c) converting the composite polymer blend into the article of manufacture, the article of manufacture having a smooth surface appearance and a gel content that is below detectable limits when using xylene as the solvent in ASTM D 2765-90, method B; and wherein the amount of peroxide is based on the weight of the high melting polymer and the weight of either the elastomeric polymer of the elastomeric polymer blend.

18. (Previously Presented) An article of manufacture having at least one component thereof fabricated from the composition of Claim 1.

19. (Previously Presented) The article of Claim 18, wherein the composition further comprises at least one additive selected from the group consisting of process oils and fillers.

20. (Previously Presented) The article of Claim 19, wherein the process oil is present in an amount within a range of from greater than 0 to about 50 percent by weight, based on total composition weight.

21. (Previously Presented) The article of Claim 19, wherein the filler is selected from the group consisting of glass, silica, carbon black, metal carbonates, metal sulfates, talc, clay and graphite fibers.

22. (Previously Presented) The article of Claim 19, wherein the filler is present in an amount within a range of from greater than 0 to about 70 percent by weight, based on total composition weight.

23. (Previously Presented) The composition of Claim 1, wherein the peroxide to coagent ratio is from 1:10 to 1:20.

24. (Previously Presented) The article of Claim 18, wherein the article is an extruded profile.

25. (Previously Presented) The article of Claim 18, wherein the article is an injected molded article.

26. (Previously Presented) The article of Claim 18, wherein the article is a blow molded article.

27. (Previously Presented) The article of Claim 18, wherein the article is a calendared article formed from a high product line speed process.
28. (Previously Presented) The article of Claim 18, wherein the article is an automobile body part.
29. (Previously Presented) The article of Claim 18, wherein the article is a polymer film or polymer sheet.
30. (Previously Presented) The article of Claim 18, wherein the article is a recreational vehicle part.
31. (Previously Presented) The article of Claim 18, wherein the article is a roofing membrane.
32. (Previously Presented) The article of Claim 18, wherein the article is a footwear component.